Remarks:

The amendments and remarks presented herein are believed to be fully responsive to the Office Action dated January 26, 2009.

Claims 1-28 are pending in the application. Claims 1, 10, 14, 19 and 22 have been amended as set forth above. The amendments are fully supported in the specification and drawings as originally filed. No new matter has been added.

CLAIM OBJECTIONS

Claim 10 was objected to under 37 CFR §1.75(c) as being of improper dependent form. Claim 10 has been amended as set forth above. Applicants respectfully request withdrawal of the objection to claim 10 in view thereof.

CLAIM REJECTIONS

Claim 1 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite for reciting both "a porous ceramic body" and "especially of a filter membrane." Claim 1 has been amended as set forth above to remove the description of "especially of a filter membrane." Applicants respectfully request withdrawal of the objection under 35 U.S.C. §112 to claim 1 in view thereof.

Claims 1-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Great Britain Patent GB 790,672 in view of International Patent Application publication WO 00/01463, U.S. Patent No. 7,112,237 to Zeller et al., and U.S. Patent No. 5,679,248 to Blaney.

Claims 1-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 6,214,078 to Way, in view of International Patent Application publication WO 00/01463, U.S. Patent No. 7,112,237 to Zeller et al., and U.S. Patent No. 5,679,248 to Blaney.

Applicants respectfully traverse the rejections under 35 U.S.C. §103(a) for the reasons set forth below.

Applicants have amended independent claim 1 to clarify that the method for the production of a porous ceramic body comprises selecting a first ceramic powder substantially comprising α-SiC grains aside from unavoidable contaminants with a first grain size class, selecting a second ceramic powder substantially comprising α-SiC grains aside from unavoidable contaminants with a second grain size class that is substantially smaller than the first grain size class, mixing of the first and second ceramic powders to produce a powder with a bimodal grain size distribution, shaping of a molded body from the powder mixture, and heating and conditioning of the molded body at a temperature from 1750 to 1950 degrees Celsius and for a period of time such that, through recrystallization of the molded body, the grains with the second grain size are dissolved and, through attachment of the material of the second ceramic grains to the first ceramic grains, these are firmly linked to each other.

In contrast, among other distinguishing features the cited references disclose a higher recrystallization temperature such as to assure sublimation, vaporization of the fine silicon carbide power. For example, U.S. 6,214,078 to Way discloses in Figure 1 and col.3,ll. 56-59 recrystallization temperatures greater than 2300 degrees Celsius; Great Britain Patent GB 790,672 discloses in claim 1 recrystallization at between 2100 and 2450 degrees Celsius; International Patent Application publication WO 00/01463 discloses in claim 42 sintering of a shaped body at a temperature interval of 2100-2600 degrees Celsius. These higher recystallizaiton temperatures lead to a porous structure with large grain growth and at the same time lead to the formation of isolated undesirable large pores by material rearrangement with no change in volume, such as illustrated in Figure 2 of U.S. 6,214,078.

The recrystallization temperature of amended claim 1, however, avoids too strong grain growth while still achieving sufficient strength of the body. Moreover, the porous ceramic body structure has a substantially homogeneous structure of interconnected, open pores and ceramic grains, with both the ceramic grains and open pores lying substantially in defined ranges in at least one of a narrow grain size range or a narrow pore size range, without undesirable isolated large pores. The porous ceramic body, therefore, has better structure and filter properties that may be adjusted very precisely by the appropriate narrow grain and pore size ranges.

Moreover, the recrystallization temperature of amended claim 1 provides for the possibility of obtaining ceramic grains of the porous ceramic body with a rounded shape, as noted in paragraph 20 of the published application, which is beneficial to the characteristics and service life of a filter.

Applicants respectfully submit that none of the prior art of record, either alone or in combination, disclose or suggest the method of producing a porous ceramic body of independent claim 1. Accordingly, Applicants respectfully submit that independent claim 1 is in condition for allowance, as well as dependent claims 2-13 and 22-25 that depend from claim 1.

Applicants have amended independent claim 14 to clarify that the porous ceramic body is produced by selecting a first ceramic powder with a first grain size class that substantially comprises α-SiC grains aside from unavoidable contaminants, selecting a second ceramic powder that substantially comprises α-SiC grains aside from unavoidable contaminants with a second grain size class that is substantially smaller than the first grain size class, mixing of the first and second ceramic powders to produce a powder with a bimodal grain size distribution, shaping of a molded body from the powder mixture, and heating and conditioning of the molded body at a temperature from 1750 to 1950 degrees Celsius and for a period of time such that, through recrystallization of the molded body, the grains with the second grain size are dissolved and, through attachment of the material of the second ceramic grains to the first ceramic grains, these are firmly linked to each other. The ceramic body thus comprises a substantially homogeneous structure of interconnected open pores and ceramic grains, with the ceramic grains having a substantially rounded shape, and with both the ceramic grains and the open pores lying substantially in defined ranges in at least one chosen from a narrow grain size range and a narrow pore size range, wherein the defined ranges of the narrow grain size range or the narrow pore size range distribution are present as in a form of at least one layer on a coarse-porous support and the ceramic body substantially comprises recrystallized RSiC aside from unavoidable contaminants.

Applicants respectfully submit that the resulting porous ceramic body is not disclosed by the prior art of record that disclose ceramic bodies produced at higher

recrystallization temperatures having porous structures with large grain growth and the formation of isolated undesirable large pores by material rearrangement with no change in volume. In contrast, the porous ceramic body produced by the recrystallization temperature of amended claim 14 avoids too strong grain growth while still achieving sufficient strength of the body. The porous ceramic body has a substantially homogeneous structure of interconnected, open pores and ceramic grains, with both the ceramic grains and open pores lying substantially in defined ranges in at least one of a narrow grain size range or a narrow pore size range, and without undesirable isolated large pores. The porous ceramic body structure may be adjusted very precisely by the appropriate narrow grain and pore size ranges and forms ceramic grains with a substantially rounded shape, which is beneficial to the characteristics and service life of a filter.

Applicants respectfully submit that independent claim 14 is in condition for allowance, as well as dependent claims 15-18 and 26-27 that depend from claim 14.

Applicants have amended independent claim 19 to clarify that the cross-flow membrane filter comprises a ceramic body on a SiC coarse-porous support, with the ceramic body including at least one layer having a first ceramic powder, with the ceramic body made by selecting the first ceramic powder with the first grain size class that substantially comprises α-SiC grains aside from unavoidable contaminants, and selecting the second ceramic powder that substantially comprises α-SiC grains aside from unavoidable contaminants with the second grain size class that is substantially smaller than the first grain size class, mixing of the first and second ceramic powders to produce a powder with a bimodal grain size distribution, shaping of a molded body from the powder mixture, and heating and conditioning of the molded body at a temperature from 1750 to 1950 degrees Celsius and for a period of time such that, through recrystallization of the molded body, the grains with the second grain size are dissolved and, through attachment of the material of the second ceramic grains to the first ceramic grains, these are firmly linked to each other. Wherein via recrystallization the second ceramic powder is dissolved and attached to the first ceramic powder such that the second ceramic powder is firmly linked to the first ceramic powder, and wherein the ceramic body comprises a substantially homogenous structure of interconnected open pores and ceramic grains with the ceramic grains

having a substantially rounded shape, and wherein the ceramic grains and open pores lie substantially in defined ranges in at least one chosen from a narrow grain size range and a narrow pore size range.

Applicants respectfully submit that the resulting cross-flow membrane filter is not disclosed by the prior art of record that disclose ceramic bodies produced at higher recrystallization temperatures having porous structures with large grain growth and the formation of isolated undesirable large pores by material rearrangement with no change in volume. In contrast, the porous ceramic body of the cross-flow membrane filter produced by the recrystallization temperature of amended claim 19 avoids too strong grain growth while still achieving sufficient strength of the body. The porous ceramic body has a substantially homogeneous structure of interconnected, open pores and ceramic grains, with both the ceramic grains and open pores lying substantially in defined ranges in at least one of a narrow grain size range or a narrow pore size range, and without undesirable isolated large pores. The porous ceramic body structure may be adjusted very precisely by the appropriate narrow grain and pore size ranges and forms ceramic grains with a substantially rounded shape, which is beneficial to the characteristics and service life of a filter.

Applicants respectfully submit that independent claim 19 is in condition for allowance, as well as dependent claims 20-21 and 28 that depend from claim 19.

Accordingly, Applicant respectfully submits that neither Great Britain Patent GB 790,672 or U.S. 6,214,078 in combination with one another or with any other prior art of record, disclose, teach, suggest or render obvious the method for producing a porous ceramic body of independent claim 1, or the porous ceramic body of independent claim 14, or the cross-flow membrane filter of independent claim 19, or in the claims depending therefrom. Reconsideration and withdrawal of the rejections of claims 1-28 is respectfully requested.

Claims 1-28 remain pending in the application. Applicants respectfully submit that claims 1-28 are in condition for allowance and a notice to that effect is earnestly and respectfully requested.

Respectfully submitted,

PER STOBBE and UDO HACK

By: Van Dyke, Gardner, Linn & Burkhart, LLP

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